

**AMENDMENTS TO THE CLAIMS:**

Please amend claims 3-6, as listed in the following listing of the claims, which replaces all prior versions and listings of claims in the application:

**LISTING OF CLAIMS:**

1. (Original) An electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, comprising:

a characteristics information data base for storing parts information on parts and wirings constituting a test object circuit, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoke time characteristics of the wirings;

an assigned path searching unit for searching an assigned path between a short-circuit point and the power supply when the short-circuit point on the test object circuit is assigned;

a current value calculating unit for calculating a resistance value on the assigned path searched by the assigned path searching unit, and calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and

a judging unit for judging whether each protecting part on the test object circuit is fused and whether each wiring of the assigned path smokes based on the short-circuit current value calculated by the current value calculating unit, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

2. (Original) An electric wiring simulation device according to claim 1,  
wherein the current value calculating unit takes account of the resistance value during heat emission based on a change in the resistance values with respect to time, the resistance values included in the parts information.
3. (Currently Amended) A recording medium for recording a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, the simulation program recorded on the recording medium comprising:
  - a storage process ~~processing~~ for storing parts information on parts and wirings constituting a test object circuit inputted as a simulation object, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoking time characteristics of the wirings, in a data base;
  - an assigned path searching process ~~processing~~ for searching an assigned path between a short-circuit point and the power supply when the short-circuit point is assigned on the test object circuit;
  - a current value calculating process ~~processing~~ for calculating a resistance value on the assigned path searched in the assigned path searching process ~~processing~~, and for calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and
  - a judging process ~~processing~~ for judging whether each protecting part on the assigned path is fused and whether each wiring on the assigned path smokes based on

the short-circuit current value calculated in the current value calculating process-  
~~processing~~, the current-smoke time characteristics and the current-prearcing time  
characteristics, at unit time intervals.

4. (Currently Amended) A recording medium for recording a simulation program for  
an electric wiring simulation device simulating characteristics of an electric wiring  
according to claim 3,

wherein the current value calculating process ~~processing~~ is conducted while  
taking account of the resistance value during heat emission based on a change in the  
resistance values with respect to time, the resistance values included in the parts  
information.

5. (Currently Amended) A computer readable medium containing computer code for  
performing a simulation program for an electric wiring simulation device simulating  
characteristics of an electric wiring while the electric wiring is short-circuited, the  
computer code for performing a simulation program comprising:

a storage code segment for storing parts information on parts and wirings  
constituting a test object circuit inputted as a simulation object, discharge characteristics  
of a power supply, current-prearcing time characteristics of protecting parts and current-  
smoking time characteristics of the wirings, in a data base;

an assigned path searching code segment for searching an assigned path  
between a short-circuit point and the power supply when the short-circuit point is  
assigned on the test object circuit;

a current value calculating code segment for calculating a resistance value on the assigned path searched in the assigned path searching code segment, and for calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and

a judging code segment for judging whether each protecting part on the assigned path is fused and whether each wiring on the assigned path smokes based on the short-circuit current value calculated in the current value calculating code segment, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

6. (Currently Amended) A computer readable medium containing computer code for performing a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited according to claim 5,

wherein the current value calculating code segment is conducted while taking account of the resistance value during heat emission based on a change in the resistance values with respect to time, the resistance values included in the parts information.